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Title: Viewgraphs for 20 HeV Proton Beam

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Intended for: 2 Viewgraphs for beam instrumentation colleagues

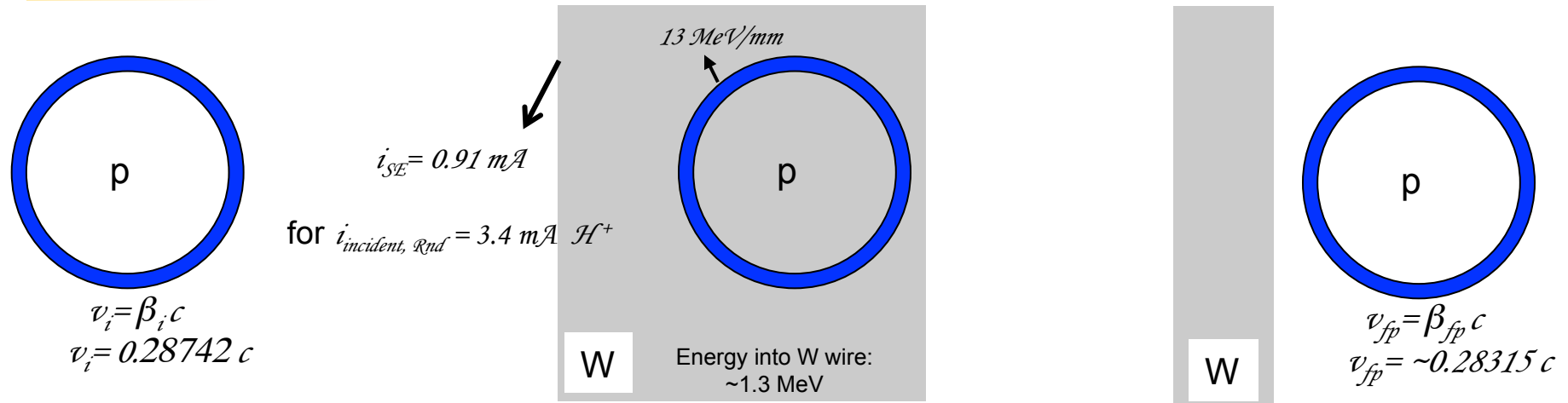
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# 41.3-MeV H<sup>+</sup> beam interacts with a W sense wire – Sternglass theory for amount of SE current.



- **Initial H<sup>+</sup> beam at tank #3 input: nom. 41.3353 MeV**
  - $\sim 1$  secondary electron for every 3.8 incident protons impinging on wire material
    - Stopping Power =  $\sim 132 \text{ MeV/cm}$  in W; Range (CSDA) =  $\sim 0.19 \text{ mm}$  in W
- **H<sup>+</sup> beam at spatial peak, 0.269 SE current for a 0.1-mm W wire**
  - 2.47- X 1.31-mm (1.89 mm – averaged round beam), 12.75 mA (TDCM001), 4-Hz X 0.15-ms, H+IP gated beam

# H<sup>+</sup> beam at 03WS001 location; Jan 23 data

- Observed  $dq$  and  $dt$ : average of 14.4- or 10.3-nC in 140  $\mu$ s,  $N_{\text{avg}} = 1$ , 4-Hz X 0.15-ms beam or 0.088 mA
  - Observed 12.75 mA<sub>pk</sub> at TDCM001
    - Rms width: 2.47 mm (Hor) X 1.31 mm (Ver)
  - Observed current: ~0.088 mA at spatial peak
    - Observation, ~1/10 current of Sternglass theory (compared to 0.91 mA)
    - Negative distribution

